

LIST OF THE LEPIDOPTERA COLLECTED IN EASTERN AFRICA BY DR. W. L. ABBOTT, WITH DESCRIPTIONS OF SOME APPARENTLY NEW SPECIES.

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THE collection of Lepidoptera referred to me for determination from the U. S. National Museum, contains ninety-one species of Rhopalocera and forty-six species of Heterocera. They had all been pinned and expanded at the National Museum, and a small ticket with the word Zanzibar written upon it affixed to the pins in most cases. In a few cases there was in addition a label in another handwriting, presumably that of Dr. Abbott, giving information as to the exact locality from which certain specimens came. An examination renders it probable that these latter labels are clipped from the envelopes in which the insects were originally packed. In a number of instances it is plain that instead of having come from Zanzibar or its immediate vicinity, as the small labels affixed at the Museum would indicate, they must have come from the interior, and from a relatively high altitude above the level of the sea. The collection contains only a small number of species new to science, the great majority being species well known from other localities, and noticeably from temperate South Africa, many of them species named in the last century. The presence of an *Argynnis* and a *Chrysophanus* in the collection is peculiarly interesting, and suggests to the student the thought that when a more thorough exploration of the lofty heights of Kilimanjaro, Kenia and Ruwenzori shall have been made, there will be some very remarkable, if not astonishing, facts brought to light as to the geographical distribution of animals.

Suborder RHOPALOCERA.

Family NYMPHALIDÆ, Swainson.

Genus DANAIS, Latreille.

DANAIS CHRYSIPPUS, Linnæus, var. KLUGII, Butler.

*Limnas klugii*, BUTLER, Proc. Zool. Soc. Lond., 1885, p. 758.

*Euplwa dorippus*, var. *klugii*, KLUG, Symb. Phys., pl. XLVIII, fig. 5.

There are two females and one male specimen of this species in the collection. The females differ in size, and the larger example exceeds

in expanse of wing the average-sized specimens in the writer's collection from the vicinity of Aden and from Mamboia-land. The smaller of the two females is labeled "Taveta, January, 1889".

DANAIS PETIVERANA, Doubleday.

*Danais limniace*, CRAMER, var. *Petiverana*, DOUBLEDAY and HEWITSON, Gen. Diurn. Lep., p. 93, pl. XII, fig. 1 (1817).

*Danais leonora*, BUTLER, Proc. Zool. Soc. Lond., 1862, p. 51; Lepid. Exot., p. 53, pl. XX, fig. 2.

There is but one example of this species, a male, in the collection. It does not differ in the least from examples taken upon the western coast of Africa.

Genus AMAURIS, Hübner.

AMAURIS DOMINICANUS, Trimen.

*Danais niavius* (LINNÆUS), var., TRIMEN, Trans. Linn. Soc., XXVI, pp. 511, 521, pl. XLII, fig. 6 (♂) (1869).

*Amauris dominicanus*, TRIMEN, Trans. Ent. Soc. Lond., 1879, p. 323; South African Butterflies, I, p. 61 (1887).

There are two specimens of this species, both males, and both rather smaller than typical examples from Natal, otherwise not differing at all. There is no clue to the exact locality from which the specimens came, but Gerstæcker<sup>1</sup> gives Mombasa as one of the localities of the species, and it is therefore probable that they were taken somewhere in the hot lowlands. The genus is best represented in the hottest parts of tropical West Africa.

Subfamily SATYRINÆ, Bates.

Genus MELANITIS, Fabricius.

MELANITIS LEDA, Linnæus, var. SOLANDRA, Fabricius.

*Papilio leda*, LINNÆUS, Syst. Nat., I, 2, p. 773, n. 151 (1767).

*Papilio solandra*, FABRICIUS, Syst. Ent., p. 500, No. 244 (1775).

Two specimens, in nothing differing from examples taken upon the Congo and the Ogové.

Genus MYCALESIS, Hübner.

MYCALESIS SAFITZA, Hewitson.

*Mycalesis safitza*, HEWITSON, Gen. Diurn. Lep., p. 394, n. 10, pl. LXVI, fig. 3 (1851); Exot. Butt., III, p. 80, pl. XL, fig. 4 (1862).—TRIMEN, S. African Butt., I, p. 105.

*Mycalesis eusirus*, HOPFFER, Monatsber. d. K. Akad. Wiss., Berl., 1855, p. 641, n. 13, and Peter's Reise n. Mossamb., Ins., p. 393, pl. XXV, figs. 3, 4.

There is one example of the male of this species closely agreeing with Hopffer's description and figure of *M. eusirus*, the proofs of the identity of which with *M. safitza*, Hewitson, Mr. Trimen has most forcibly presented in his recent work upon the South African butterflies.

<sup>1</sup>Gliederthier Fauna des Sansibar-Gebietes, p. 367.

## MYCALESIS SAFITZA, Hewitson, var. EVENUS, Hopffer.

*Mycalesis crenus*, HOPFFER, Monatsber. d. K. Akad. Wiss., Berl., 1855, p. 641, n. 14; p. 394, pl. xxv, figs. 5, 6 (1862).

There is a good female of the *Erenus* variety in the collection.

## MYCALESIS PERSPICUA, Trimen.

*Mycalesis perspicua*, TRIMEN, Trans. Ent. Soc. London, 1873, p. 104, pl. i, fig. 3.

The collection contains a beautiful male specimen of this well-marked species.

## MYCALESIS SANAOS, Hewitson.

*Mycalesis sanaos*, HEWITSON, Ex. Butt., III, pl. vi, fig. 34.

The collection contains one example of the male, which does not differ materially from specimens coming from Gaboon and the Gold Coast.

## Subfamily ACRÆINÆ.

## Genus ACRÆA, Fabricius.

## ACRÆA CERASA, Hewitson.

*Acræa cerasa*, HEWITSON, Exot. Butt., II, pl. xx, fig. 10 (1861).—TRIMEN, South African Butt., I, p. 139 (1887).

Three specimens, rather smaller than the average.

## ACRÆA INSIGNIS, Distant.

*Acræa insignis*, DISTANT, Proc. Zool. Soc. Lond., 1880, p. 184, pl. xix, fig. 6.

*Acræa burtoni*, HEWITSON (nec Butler), Ent. Mon. Mag., XIV, p. 155.

*Acræa balbina*, OBERTHÜR, Etudes d'Ent., XII, p. 6, pl. iii, fig. 8.

The National Museum collection contains seven specimens of this very pretty species, all of them of the form mentioned by the author of the species, in which the black spots upon the secondaries are fused into one large spot.

## ACRÆA SGANZINI, Boisduval.

*Acræa sganzini*, BOISDUVAL, Faune Madgr., p. 34, No. 10, pl. vi, figs. 6, 7 (1833).

There are a number of fairly good specimens of this species. A slight variety of this species has just been described by M. Vuillot, of Paris, under the name *A. usugara*, and has been marketed in quantity by Dr. Standinger, of Dresden. One or two of the specimens agree with the form *Usugara*, being slightly lighter in the ground color than typical *A. sganzini*, and having the spots less developed.

## ACRÆA SERENA, Fabricius.

*Papilio serena*, FABRICIUS, Syst. Ent., p. 461, n. 76 (1775).

The specimens of this species contained in the collection differ from the common form found upon the west coast, in that the dark transverse

subapical band does not extend in them to the border of the outer margin and unite with it. Otherwise I can see no difference. The specimens are labeled "Kilimanjaro, 5,000 feet."

ACRÆA CABIRA, Hopffer.

*Acræa cabira*, HOPFFER, Monatsber. d. K. Akad. d. Wiss. Berlin, 1855, p. 640, No. 7; Pet. Reise, Zool., V, p. 378, pl. 23, figs. 14, 15 (1862).

Several good specimens from Kilimanjaro.

ACRÆA PHARSALOIDES, new species.

(Plate VII, fig. 3.)

Agrees with *A. pharsalus*, Ward, in size and in the disposition of the spots upon the upper and lower surfaces of the wings, save that the transapical band of the primaries is fulvous and entirely without white markings, and the spot at the end of the cell of the primaries coalesces with the large quadrate spot which bounds this band internally, forming a very large black spot extending from the costa to the second submedian nervule. The general color of the upper surface is bright fulvous, whereas in *A. pharsalus* it is fuscous. There is one female specimen in the National Museum collection. This may be merely a local race of *A. pharsalus*.

*Locality*.—Kilimanjaro.

ACRÆA MINIMA, new species.

Allied to *Eponina*, Cramer, but from one-fourth to one-third smaller in size. The upper side of the wings is deep black, with a subapical crimson spot as in *Eponina*, and with the discal area of both wings traversed by a broad band of the same color. The inner edge of this band upon both wings is nearly straight, and forms a continuous line from near the outer extremity of the cell of the primaries to about the middle of the inner margin of the secondaries. The cell of the primaries is not traversed longitudinally by a ray of scarlet fusing with the discal band as in *Eponina*. The outer margin of the scarlet band upon the secondaries is produced opposite the extremity of the cell, and gives the band a strongly angulated appearance. Upon the under side of the wings the scarlet of the subapical spot of the primaries and of the entire secondaries is replaced by ochre-yellow, while the scarlet of the discal band of the primaries reappears upon the lower side, though not as vivid in tone as upon the upper surface, and extends inwardly quite to the base of the wing. The secondaries are ornamented just before the base by a diagonal row of very black spots more or less fused together and forming a narrow band. Upon the outer margin on the interspaces there are seven small triangular white spots. In some specimens a similar spot appears near the outer angle of the primaries.



*Female*.—In the case of the solitary female in the collection, the under side of the secondaries from the basal band of spots outwardly to the margin is broadly suffused with fuscous. Whether this is a constant feature of this sex, it is impossible to say without more material at command. It has the appearance to the writer of being a case of aberrant melanism rather than as the normal coloration, but until we know more of the species it will not be safe to make any positive affirmations.

Expanse of wings: male, 27-32 mm.; female, 36 mm.

There are seven males and one female of this very pretty little species in the National Museum collection.<sup>1</sup>

#### ACRÆA NATALICA, Boisduval.

*Acræa natalica*, BOISDUVAL, App. Voy. de Deleg. dans l'Afr. Austr., p. 590, n. 57 (1847).

There are seven males and three females in the collection, and they do not differ materially from specimens from the region of the Cape, except that the females are more or less suffused with whitish upon the upper surface of the disks of the secondaries. Collected at Taveta.

#### ACRÆA EGINA, Cramer.

*Papilio egina*, CRAMER, Pap. Exot., I, pl. 39, figs. F, G (1776).

One male example, the antennæ of which have been lost.

#### ACRÆA JOHNSTONI, Godman.

*Acræa johnstoni*, GODMAN, Proc. Zool. Soc. Lond., 1885, p. 537.—BUTLER, Proc. Zool. Soc. Lond., 1888, p. 91.

There are two pairs of this beautiful insect in the collection.

#### ACRÆA ABBOTTII, new species.

(Plate VII, fig. 1.)

Allied in some particulars to *A. cabira*, Hopffer, but widely different.

*Male*.—Upper side: Anterior wings pale ochreous, with the base, the cell, except a small triangular space at its lower edge near its outer end, the costal margin, the apex, and the outer margin broadly black. The ground color is disposed in the form of an oval subapical spot and a broad discal band parallel to the outer margin. The inner margin of the black apical area is minutely excised just above the origin of the second median nervule, and just below there is a round black spot. The black of the basal part of the wing is extended in the form of a narrow streak for a short distance between the median and the

<sup>1</sup>This species is identical with *A. planesium*, Oberthür, Etudes d'Entom., XVII, p. 24, pl. 1, fig. 11; cf. Ann. and Mag. Nat. Hist., October, 1893, p. 24.

submedian nerves. The secondaries are broadly pale ochreous, of the same tint as the primaries, with the outer margin broadly and evenly bordered with black. There is a small black spot on the costa near the base, and another near its middle, followed beneath by two minute spots, the three forming a short transverse series. Under side: The base, the costal margin, and the outer margin of the primaries are grayish fuscous. The nervules at their extremities are shaded with blackish, and between them there is a series of marginal greenish ochreous triangular spots, the apices of which pointing inwardly are surmounted each with a short blackish ray or dash. A narrow black line crosses the cell near its middle, and at its end there is a broad subapical bar of black, which extends from the costa, where it is widest, about two-thirds of the distance to the outer margin, and is slightly excised upon its inner margin. The secondaries are bordered with black as upon the upper surface, and have a marginal series of whitish triangular spots upon the interspaces, and a few small black spots near the base, viz: upon the costa, one at the base, one just beyond it, and one at the middle; one in the middle of the cell, and five or six quite small ones disposed in a semicircular series near the middle of the inner margin. The body is black, spotted with yellow; the antennæ are black. The lower side of the palpi and of the thorax and abdomen are pale gray.

*Female*.—The female does not differ materially from the male, except that upon the upper side there is an additional black spot situated between the submedian and first median nervule, and the small spots upon the costal area of the secondaries are obsolete except the two immediately upon the costa. The under side is as in the male, with the exception of the presence of the additional spot between the submedian and the first median nervule.

Expanse of wings: Male, 38 mm.; female, 45 mm.

The National Museum collection contains one male and two females, one of which is lighter upon the under side than the other.

#### Family NYMPHALINÆ, Bates.

#### Genus LACHNOPTERA, Doubleday.

#### LACHNOPTERA AYRESII, Trimen, var. ABBOTTII, new variety.

*Female*.—Differs from typical *L. ayresii*, Trimen<sup>1</sup>, in having the under side of both wings broadly tinged with lilac instead of "brassy greenish." In other respects it appears to be very much as the South African insect except that the markings are somewhat more distinct.

The National Museum collection contains one slightly damaged female of this interesting form.

<sup>1</sup> South African Butterflies, I, p. 197.

Genus ARGYNNIS, Fabricius.

ARGYNNIS HANNINGTONI, Elwes.

(Plate VII, fig. 2).

*Argynnis hanningtoni*, ELWES, Trans. Ent. Soc. Lond., 1889, p. 558.

The collection contains six males and three females, in good condition. There is no clue to their habitat, but as *A. hanningtoni* came from Taveta, it is highly probable that these specimens came from the same region.

Genus HYPANARTIA, Hübner.

HYPANARTIA HIPPOMENE, Hübner.

*Hypanartia hippomene*, HÜBNER, Sammlung Exot. Schmetter., 1816-1824.

Two defective specimens of this species.

Genus PYRAMEIS, Hübner.

PYRAMEIS CARDUI (Linnæus).

*Papilio cardui*, LINNÆUS, Faun. Suec., p. 276, n. 1054 (1761).

Two examples of this, the most cosmopolitan of all butterflies.

Genus JUNONIA, Hübner.

JUNONIA CEBRENE, Trimen.

*Junonia cebrene*, TRIMEN, Trans. Ent. Soc. Lond., 1870, p. 353; S. Afr. Butt., I, p. 210.

One female.

JUNONIA CLELIA (Cramer).

*Papilio clelia*, CRAMER, Pap. Exot., I, pl. XXI, figs. E, F (1779).

Four males and five females, Taveta.

JUNONIA BOÖPIS, Trimen.

*Junonia boöpis*, TRIMEN, Trans. Ent. Soc. Lond., 1879, p. 331; S. Afr. Butt., I, p. 217.

Two examples of this form, which is very doubtfully distinct from *J. orithyia*, Linnæus.

Genus PRECIS, Hübner.

PRECIS CLOANTHA (Cramer).

*Papilio cloantha*, CRAMER, Pap. Exot., III, pl. CCCXXXVIII, figs. A, B (1782).

There is one example of the female sex of this species in the collection.

PRECIS CERYNE (Boisduval).

*Salamis ceryne*, BOISDUVAL, App. Voy. de Deleg., p. 592, n. 68 (1847).

There is a damaged specimen of the male of this species.

## PRECIS SESAMUS, Trimen.

*Precis sesamus*, TRIMEN, S. Afr. Butt., I, p. 231 (1887).

There are two specimens of this form to which Mr. Trimen has given the foregoing specific name, separating it from *P. amestris*, Boisduval, with which it has hitherto been always associated in collections.

*Locality*.—Kilimanjaro.

## PRECIS ELGIVA (Hewitson).

*Junonia elgiva*, HEWITSON, Exot. Butt., III, pl. 13, fig. 1 (1864).

There is a solitary male of this species.

## PRECIS NATALICA, Felder.

*Precis natalica*, FELDER, Wien. Ent. Mon., IV, p. 106 (1860).

One female example in poor condition.

## PRECIS SOPHIA (Fabricius).

*Papilio sophia*, FABRICIUS, Ent. Syst., III, 1, p. 248, No. 771 (1793).

There are three specimens of this species, two females of the pale form, which seems to be most common on the eastern coast and in the interior, and is rarely found upon the western coast.

## Genus EURYTELA, Boisduval.

## EURYTELA HIARBAS (Drury).

*Papilio hiarbas*, DRURY, Ill. Exot. Ent., III, pl. 14, figs. 1, 2 (1772).

Three good specimens.

## EURYTELA DRYOPE (Cramer).

*Papilio dryope*, CRAMER, Pap. Exot., pl. LXXVIII, figs. E, F (1779).

Three good examples of this species, the coloring of the outer limbal fascia of which is rather brighter fulvous red than in examples from the region of the Cape and Angola.

## EURYTELA OPHIONE (Cramer).

*Papilio ophione*, CRAMER, Pap. Exot., II, pl. CXIV, figs. E, F (1779).

Six examples quite like those from the west coast.

## Genus HYPANIS, Boisduval.

## HYPANIS ILITHYIA (Drury).

*Papilio ilithyia*, DRURY, Ill. Exot. Ent., II, pl. XVII, figs. 1, 2 (1773).

The collection contains two males and five females, all of them differing slightly from each other, and illustrating the remarkable variability of the species.

*Locality*.—Taveta.

Genus HYPOLIMNAS, Hübner.

HYPOLIMNAS MISIPPUS (Linnæus).

*Papilio misippus*, LINNÆUS, Mus. Utr., p. 264 (1764).

Three males and one female of the typical form, which mimics *Danaus chrysippus*, Linnæus.

Locality.—Taveta.

Genus NEPTIS, Fabricius.

NEPTIS MELICERTA (Drury).

*Papilio melicerta*, DRURY, Ill. Exot. Ent., II, pl. XIX, figs. 3, 4 (1773).

Two examples.

Genus EUPHÆDRA, Hübner.

EUPHÆDRA NEOPHRON (Hopffer).

*Romaleosoma neophron*, HOPFFER, Monatsber. d. K. Akad. d. Wiss. Berlin, 1855, p. 640.

There is one good example of this species, which is widely distributed upon the eastern coast of Africa.

Genus HAMANUMIDA, Hübner.

HAMANUMIDA DÆDALUS (Fabricius).

*Papilio dædalus*, FABRICIUS, Syst. Ent., p. 482, n. 174 (1775).

One finely preserved specimen.

Genus PALLA, Hübner.

PALLA VARANES (Cramer).

*Papilio varanes*, CRAMER, Pap. Exot., II, pl. CLX, figs. D, E (1779).

Two fairly good examples.

Genus CHARAXES, Ochseneheimer.

CHARAXES CITHÆRON, Felder.

*Charaxes cithæron*, FELDER, Wien. Ent. Mon., III, p. 398, pl. VIII, figs. 2, 3 (1859).

One female of this species.

Family LYCÆNIDÆ, Stephens.

Genus TINGRA, Boisduval.

TINGRA MOMBASÆ, Smith and Kirby.

*Tingra mombasa*, SMITH and KIRBY, Rhop. Exot., I, p. 31, Lycaenidæ (African), pl. VIII, fig. 11.

One female specimen of this species.

## Genus LYCÆNA, Fabricius.

LYCÆNA GAIKA, Trimen.<sup>1</sup>

*Lycæna gaika*, TRIMEN, Trans. Ent. Soc. Lond., 3d. ser., I, p. 403 (1862).

The correctness of Mr. Trimen's identification of this insect with *Zizera pygmaea*, Snellen, is unquestionable. I happen to have a good series of the latter species from various parts of oriental Asia, and after a comparison with an equally good series of *L. gaika* coming from Natal and the specimens contained in the present collection, am able to affirm with Mr. De Nicéville that *pygmaea* is "an absolute synonym".

Four examples in good condition.

## LYCÆNA LUCIDA, Trimen.

*Lycæna lucida*, TRIMEN, Trans. Ent. Soc. Lond., 1883, p. 318; S. African Butt., II, p. 47.

One female of this very distinct species, which comes nearest to *L. erschoffii*, Lederer, from northern Persia, so far as the marking of the under side is concerned. The upper side of the male sex is very different, in *L. erschoffii* being dark, bordered upon the costa with deep ultramarine blue, and in *L. lucida* being light blue, inclining to pinkish.

## LYCÆNA MORIQUA, Wallengren.

*Lycæna moriqua*, WALLENGREN, K. Sv. Vet.-Akad. Handl., 1857: Lep. Rhop. Caffr., p. 39.—TRIMEN, S. African Butt., II, p. 75.

Two good specimens of this common South African species.

## LYCÆNA TELICANUS (Lang).

*Papilio telicanus*, LANG, Verz. sein. Schmett., II, p. 47, n. 387-389 (1789).<sup>2</sup>

Four males and one female of this species, which is one of the most widely distributed species of the genus, attaining its maximum size and most beautiful coloring in the region about the head of the Gulf of Guinea.

## LYCÆNA PARSIMON (Fabricius).

*Papilio parsimon*, FABRICIUS, Syst. Ent., p. 526, n. 349 (1775).<sup>3</sup>

One excellent female specimen is the only representative of this large and beautiful species.

## LYCÆNA METHYMNA, Trimen.

*Lycæna methymna*, TRIMEN (part), Trans. Ent. Soc. Lond., 3d series, I, p. 280 (1862); S. African Butt., II, p. 27.

One female, referable according to my view to the female sex of this species.

<sup>1</sup> For synonymy, see Trimen, South African Butterflies, II, p. 50.

<sup>2</sup> For further synonymy see Trimen, South African Butterflies, II, p. 69.

<sup>3</sup> For further synonymy see Trimen, South African Butterflies, p. 18.



## LYCÆNA BÆTICA (Linnæus).

*Papilio bœticus*, LINNÆUS, Syst. Nat., I, 2, p. 789, n. 226 (1767).

This, the most widely distributed Lycænid butterfly of the Old World, is represented in the collection by two fairly good specimens.

## LYCÆNA PALEMON, Cramer.

*Papilio palemon*, CRAMER, Pap. Exot., IV, pl. cccxc, figs. E, F (1782).

A fine series of twelve specimens of this species which, with *L. lingeus*, should be separated as one of the new genera when the final revision of the Lycænidæ of the world takes place.

*Locality*.—Kilimanjaro, 5,000 feet.

## LYCÆNA PERPULCHRA, new species.

(Plate VII, fig. 7.)

The upper surface is uniformly pale lilac, shading at the base of the wings into dark gray. The spots of the under surface appear faintly upon the upper side, being reflected through. The margin is fringed with blackish, and there is a black spot surrounded with red between the first and second submedian nervules upon the secondaries. The under side is uniformly pale lilac gray. The fringe is black. There is a uniform submarginal band of subsagittate brown marks upon both wings. At the anal angle of the secondaries there is a black spot slightly irrorated with blue, and between the first and second submedian nervules a black spot marked with bright blue scales in the center. At the ends of the cells in both wings there is a curved black streak. In addition to this, upon the primaries there is a curved row of five large and very distinct black spots, and upon the secondaries three similar black spots at the base, and beyond the cell a row of eight large black spots, forming a longer and shorter loop at the sixth spot, which is the innermost of the series, and is situated just below the black streak at the end of the cell.

Expanse of wings, 40 mm.

This species may be distinguished from other African species by its large size and the distinctness of the large black spots upon the under side of the wings.

One female specimen in the National Museum collection from Kilimanjaro.<sup>1</sup>

<sup>1</sup>Since the foregoing description was written, this species has been described and renamed by both Mr. A. G. Butler and Mr. Roland Trimen; by the former under the name *Castalius hypoleucus* (Proc. Zool. Soc. Lond., 1893, p. 660), and by the latter under the name *Lycæna exclusa* (Proc. Zool. Soc. Lond., 1894, p. 47). Inasmuch as the new species in this paper were, through the kind permission of Professor Riley, all briefly diagnosed and published in *The Entomologist*, London, September, 1892, the name herein given to the species has priority and must stand.

Genus CHRYSOPHANUS, Hübner.

CHRYSOPHANUS ABBOTTII, new species.

(Plate VII, fig. 4.)

The markings of the anterior wings upon the upper surface are much as in *C. phlœas*, Linnæus; the markings of the posterior wings upon the same surface recall those of *C. ochimus*, Herrich-Schäffer, female, or of *C. thersamon*, Esper, female.

*Male*.—Upper side: Anterior wing: The apex of the wing is more acute than in any other species of the genus thus far described. The color is bright metallic orange-red, inclining very slightly to dusky at the base. The costa beyond the middle is very narrowly edged with blackish; the outer margin is evenly bordered with a band of black of moderate width; the body of the wing is adorned by spots of deepest black, arranged as follows—one on the cell, one at the end of the cell, four below the costa coalescing as a subapical band, a pair disposed upon the interspaces between the median nervules, and a quadrangular spot near the outer angle between the first median nervule and the submedian nerve. Posterior wing: The ground color is the same metallic red which prevails upon the forewing, inclining very slightly near the outer margin to opaque scarlet. The base and the inner margin are somewhat densely adorned with a vestiture of dusky hairs. The costal margin is heavily bordered with black, and the outer margin very narrowly with the same color. There is a row of small marginal spots disposed upon the interspaces and fusing with the narrow outer border and causing the red area of the wing within to have a scalloped or crenelated appearance. In addition to these markings there is at the end of the cell a dusky bar, beyond the cell an interrupted transverse series of spots, one near the costa, in some specimens fusing with the dark costal margin, two opposite the cell, a pair upon the interspaces of the median nervules, and a pair upon the inner margin, more or less obscured by the dusky hairs which clothe the base. There is in addition a submarginal row of black spots forming a regular series conformed in the line of curvature with the outer margin of the wing.

Under side: Anterior wing: The under side of the anterior wing differs from the upper side in that the black margin of the outer edge of the wing is lacking, being simply represented by three obsolescent spots, one at the outer angle and two situated between the median nervules. The black spots of the basal and limbal areas of the wings reappear upon the lower side, and are larger and more distinct than upon the upper side, not coalescing at all, and each being surrounded by a faint bluish-white line. Posterior wing: The posterior wing is heavily dusted with dark ferruginous scales, and the markings of the upper side reappear very obscurely upon this side.

*Female*.—The female does not differ in anything from the male except that she is lighter in color and the markings are somewhat less distinct.

Expanse of wings, 27–28 mm.

Eight males and two females in the National Museum collection.

Genus LYCÆNESTHES, Moore.

LYCÆNESTHES LARYDAS, Cramer.<sup>1</sup>

The National Museum collection contains three male examples much lighter in color than specimens from west tropical Africa, the region from which the type came.

LYCÆNESTHES LEMNOS, Hewitson.

*Lycænesthes lemnos*, HEWITSON, Ill. Diurn. Lep., p. 221, No. 8, pl. xc, figs. 13, 14 (1878).

There is one male of this species in the National Museum collection.

I can not agree with Mr. Trimen in sinking *L. lemnos* as a synonym of *L. sylvanus*, Drury. I have an immense series of the latter from Sierra Leone and adjacent regions, all of which are much darker upon the under side than any specimens of *L. lemnos* from the eastern coast that I have ever seen, and differ noticeably in having the spots upon the basal area and near the costal margin of the under side of the secondaries very dark and conspicuous. This is not the case in *L. lemnos*, Hewitson; and besides, the general color of both the under side and the upper side of the wings of the last-mentioned species is much lighter than in *L. sylvanus*, Drury. Mr. Druce, after a careful examination of the types in the Hewitson collection, with some typical specimens of *L. sylvanus*, Drury, before him at the time, reaches the same conclusion which I have expressed, and further gives it as his impression that the female figured by Hewitson as the female of *L. sylvanus* is in fact that sex of *L. lemnos*, Hewitson.

Genus HYPOLYCÆNA, Felder.

HYPOLYCÆNA PHILIPPUS (Fabricius).

*Hesperia philippus*, FABRICIUS, Ent. Syst. III, 1, p. 283, No. 87 (1793).

One male of this exceedingly widely distributed species.

Genus CHRYSORYCHIA, Wallengren.

CHRYSORYCHIA HARPAX (Fabricius).

*Papilio harpax*, FABRICIUS, Syst. Ent., App., p. 829, Nos. 327, 328 (1775).

One male of this species, notably larger than any specimens I have ever seen from the more southern portions of the continent.

<sup>1</sup> For synonymy see Trimen, South African Butterflies, II, p. 96.

## Family PAPILIONIDÆ, Leach.

## Subfamily PIERINÆ, Swainson.

## Genus PONTIA, Fabricius.

## PONTIA ALCESTA (Cramer).

*Papilio alcesta*, CRAMER, Pap. Exot., IV, pl. CCCLXXIX, fig. A (1782).

One female of this species.

## Genus TERIAS, Swainson.

## TERIAS BRIGITTA (Cramer).

*Papilio brigitta*,<sup>1</sup> CRAMER, Pap. Exot., IV, pl. CCCXXXI, figs. B, C (1782).

The collection contains one male of this species, in which the marginal border of the secondaries is a little wider than is usual.

## TERIAS REGULARIS, Butler.

*Terias regularis*, BUTLER, Ann. and Mag. Nat. Hist., ser. 4, XVIII, p. 486 (1876).

Four males of this species were taken.

## TERIAS BISINUATA, Butler.

*Terias bisinuata*, BUTLER, Ann. and Mag. Nat. Hist., ser. 4, XVIII, p. 485 (1876).

One male specimen.

## TERIAS MANDARINULUS, new species.

(Plate VII, fig. 5.)

Recalling *T. mandarina*, De L'Orza, a well-known Japanese and Chinese species.

*Male*.—Upper side: Lemon-yellow. The primaries have the apical margin of the costa and the outer margin as far as the first median nervule bordered narrowly with brown, darkest at the tips of the nervules. There is also a small black spot at the inner angle. The secondaries have six minute black spots at the tips of the nervules, but the submedian nervule is not thus ornamented in any of the specimens before me. Under side: Primaries and secondaries have the ends of the nervules tipped with brown. There is a black spot in the middle and one at the end of the cell in the primaries, and a number of wavy and broken lines upon the secondaries.

*Female*.—The female is paler, and the markings are less distinct.

Expanse of wings, 35 mm.

Three males and two females are included in the National Museum collection.

It is with great reluctance that I add another to the long list of names that have been applied to the insects which fall into this genus, but

<sup>1</sup> For further synonymy see Trimen, Butterflies of South Africa.

after a vain attempt to find any figure or description applicable to the five specimens before me, I have resolved to give them a name which, at least to the student of Asiatic lepidoptera, will prove suggestive and descriptive.

Genus MYLOTHRIS, Hübner.

MYLOTHRIS LASTI, H. Grose Smith.

*Mylothris lasti*, H. G. SMITH, Ann. and Mag. Nat. Hist., February, 1889, p. 124.

The collection contains two female specimens of this most beautiful species.

Genus PIERIS, Schrank.

PIERIS THYSA, Hopffer.

*Pieris thysa*, HOPFFER, Monatsber. K. Akad. Wiss. Berl., 1855, p. 639, No. 1; Peter's Reise n. Mossamb., Ins., p. 349, pl. XXI, figs. 7, 8, male; 9, 10 female (1862).

One male specimen.

PIERIS MESENTINA (Cramer).

*Papilio mesentina*, CRAMER, Pap. Exot., III, pl. CCLXX, figs. A, B (1782).

Five males, one dwarfed female.

PIERIS SEVERINA (Cramer).

*Papilio severina*, CRAMER, Pap. Exot., IV, pl. CCCXXVIII, figs. G, H (1782).

Two females.

PIERIS JOHNSTONII (Crowley).

*Synchlœ johnstonii*, CROWLEY, Trans. Ent. Soc. Lond., 1887, p. 35, pl. III, figs. 1-3.

The collection contains three specimens of this species from Kilimanjaro.

Genus TERACOLUS, Swainson.

TERACOLUS HILDEBRANDTII (?) (Staudinger).

*Callosone hildebrandtii*, STAUDINGER, Exot. Schmett., p. 41, pl. 23.

There is a solitary female of some species of this genus, which I refer with a great deal of doubt to the male described and figured as *Hildebrandtii* by Staudinger in his "Exotische Schmetterlinge."

TERACOLUS CALAIS (Cramer).

*Papilio calais*, CRAMER, Pap. Exot., I, pl. LIII, figs. C, D (1779).

There are two males of this species in the collection.

TERACOLUS CASTALIS (Staudinger).

*Idmais castalis*, STAUDINGER, Exot. Schmett., p. 43, pl. 23.

There are two males of this species in the collection which present a wonderful likeness to the genus *Colias*, and might be easily mistaken for albino females of *C. electra*.

## TERACOLUS ANNÆ (Wallengren).

*Thestias anna*, WALLENGREN, K. Sv. Vet.-Akad. Handl., 1857; Lep. Rhop. Caffr., p. 16, No. 1.—TRIMEN, South Afr. Butt., III, p. 114.

There are several males of this species in the collection, which do not appear to differ from specimens coming from Natal. This species passes in many collections as *T. dana*, Fabricius, and was named as *Cinerascens* in 1873 by Mr. Butler. Mr. Trimen in his recent work has unraveled the maze of the synonymy in such a way as to clear up all difficulties.

## TERACOLUS AUXO (Lucas).

*Anthocharis auxo*, LUCAS, Rev. et Mag. Zool., 1852, p. 422.—TRIMEN, South Afr. Butt., III, p. 120.

The collection includes four males and three females of this common and widely distributed species.

## TERACOLUS GAVISIA, Wallengren, var.

*Anthopsyche gavisia*, WALLENGREN, K. Sv. Vet. Akad. Handl., 1857; Lep. Rhop. Caffr., p. 13, No. 6.

*Teracolus gavisia*, TRIMEN, S. Afr. Butt., III, p. 134.

The collection contains two males and four females, which I refer with some doubt to this species. The black bar on the inner margin of the upper side of the primaries is obsolescent, the black spot on the under side is absent, and the nervules of the secondaries on the under side are black, and there is a black band connecting the first and second costal nervules near their extremities. In all other respects the specimens agree with typical *T. gavisia*, Wallengren. The females are, as is characteristic of *T. gavisia*, somewhat variable.

## TERACOLUS OMPHALE, Godart.

*Pieris omphale*, GODART, Enc. Meth., IX, p. 122, No. 12 (1819).—TRIMEN, South Afr. Butt., III, p. 142.

This species is represented by a solitary female.

## TERACOLUS PHLEGETONIA, Boisduval.

*Anthocharis phlegetonia*, BOISDUVAL, Spec. Gen. Lep., I, p. 576, No. 25 (1836).

This pretty little species is represented by two males and one somewhat dwarfed female.

## Genus COLIAS, Fabricius.

## COLIAS ELECTRA (Linnæus).

*Papilio electra*, LINNÆUS, Syst. Nat., I, 2, p. 764, n. 101 (1767).

Several males and two females.



Genus *ERONIA*, Hübner.*ERONIA DILATATA*, Butler.

*Eronia dilatata*, BUTLER, Proc. Zool. Soc. Lond., 1888, p. 96.

The species is represented in the collection by six males, most of which are in very good condition.

Genus *CATOPSILIA*, Hübner.*CATOPSILIA FLORELLA* (Fabricius).

*Papilio florella*, FABRICIUS, Syst. Ent., p. 479, No. 159 (1775).—TRIMEN, South Afr. Butt., III, p. 185.

There are numerous specimens of the male, and several specimens of the female of this species. The course which Mr. Trimen pursues in making all the forms of *Catopsilia* (*Callidryas*) found upon the African continent to be merely forms of the one species, *Florella*, seems to me reasonable. Three of the females in the Abbott collection are of the yellow (*Rhadia*) form, and one is white. The yellow is the form I have prevalently received from Gaboon and the Congo region, from which I have in recent years obtained scores of specimens. It is the predominant form of the female.

Subfamily *PAPILIONINÆ*, Swainson.Genus *PAPILIO*, Linnæus.*PAPILIO DEMOLEUS*, Linnæus.

*Papilio demoleus*, LINNÆUS, Mus. Ulr., p. 214 (1764).

Numerous examples of this exceedingly common species.

*PAPILIO LYÆUS*, Doubleday.

*Papilio lyæus*, DOUBLEDAY, Ann. Nat. Hist., XVI, p. 178 (1845).—TRIMEN, S. Afr. Butt., III, p. 237.

I follow Mr. Trimen in separating this form from *P. nireus*, but do so, as Mr. Trimen admits that he himself does, with much doubt as to the scientific accuracy of this course, though there is some profit no doubt in clearly discriminating between the two forms.

*PAPILIO CORINNEUS*, Bertholini.

*Papilio corinneus*, BERTHOLINI, Mem. Acad. Sci. Bologn., 1849, p. 9, pl. 1, figs. 1-3.—TRIMEN, S. Afr. Butt., III, p. 217.

Two specimens of this species.

*PAPILIO CENEA*, Stoll.

*Papilio cenea*, STOLL, Suppl. Cram. Pap. Exot., p. 134, pl. XXIX, figs. 1, 1a (1791).

Two males of the variety with the very broad black submarginal band upon the secondaries.

## Family HESPERIDÆ, Leach.

## Genus CYCLOPIDES, Hübner.

## CYCLOPIDES METIS, Linnæus.

*Papilio metis*, LINNÆUS, Mus. Ur., p. 325 (1764).

There are two males in the collection which agree very well in all respects with specimens of *C. metis* from the region of the Cape, except that upon the under side of the primaries there is no basal yellow ray coalescing with the yellow spot in the cell. Otherwise I can see no reason for discriminating between them and the typical form.

## Genus PARDALEODES, Butler.

## PARDALEODES GALENUS, Fabricius.

*Hesperia galenus*, FABRICIUS, Ent. Syst., III, 1, p. 350, No. 332 (1793).

One damaged female.

## Genus PAMPHILA, Fabricius.

## PAMPHILA ERINNYIS, Trimen.

*Pamphila erinnyis*, TRIMEN, Trans. Ent. Soc. Lond., 3d ser., I, p. 290 (1861).

One good male of this species corresponding with the description of the aberrant form given by Trimen.<sup>1</sup>

## PAMPHILA ZENO, Trimen.

*Pamphila zeno*, TRIMEN, Trans. Ent. Soc. Lond., 3d ser., II, p. 179 (1864); S. Afr. Butt., III, p. 313.

The collection contains one male which I identify as that sex of *P. zeno*, though in one or two minute particulars the specimen before me does not quite tally with the description given by Trimen.

## PAMPHILA HOTTENTOTA (Latreille).

*Hesperia hottentota*, LATREILLE, Enc. Meth., IX, p. 777, n. 133 (1823).

One female example.

## PAMPHILA BORBONICA, Boisduval.

*Hesperia borbonica*, BOISDUVAL, Faune Ent. Madagas., p. 65, No. 3, pl. IX, figs. 5, 6 (1833).

Three males of this species.

## PAMPHILA, sp. (?)

There is an injured specimen of an obscure species of *Pamphila* related to *Hottentota*, which is unlike anything known to me, and which I nevertheless do not wish to attempt to describe without better material.

<sup>1</sup> South African Butterflies, III, p. 327.

## Genus ISMENE.

## ISMENE FORESTAN, Cramer.

*Papilio forestan*, CRAMER, Pap. Exot., IV, pl. CCCXCI, figs. E, F (1782).

The collection contains one male of this species in no wise differing from specimens from the region of the Cape.

## ISMENE CHALYBE, Westwood.

*Ismene Chalybe*, WESTWOOD; DOUBLEDAY and HEWITSON, Gen. Diurn. Lep., pl. 79, fig. 2 (1852).

One example of this well-known species.

## Suborder HETEROCERA.

## Family SPHINGIDÆ, Boisduval.

## Genus MACROGLOSSA, Scopoli.

## MACROGLOSSA HIRUNDO, Gerstäcker.

*Macroglossa hirundo*, GERSTÄCKER, Gliederth.-Fauna d. Sansibar-Gebietes, p. 375, pl. XV, fig. 7.

There is one example of the male of this common East African species.

## MACROGLOSSA TROCHILOIDES, Butler.

*Macroglossa trochiloides*, BUTLER, Proc. Zool. Soc. Lond., 1875, p. 5, No. 6: Trans. Zool. Soc. Lond., IX, p. 525.

There is one greased specimen of the male of this species in the collection.

*Locality*.—Kilimanjaro.

## Family AGARISTIDÆ, Swainson.

## Genus HESPAGARISTA, Walker.

## HESPAGARISTA INTERLECTA, Angas.

*Hespagarista interlecta*, ANGAS, Kaffirs Illustrated, pl. 30, fig. 10.

The collection contains a single male of this species.

## Family SYNTOMIDÆ.

## Genus PITTHEA, Walker.

## PITTHEA TRIFASCIATA, Dewitz.

*Pitthea trifasciata*, DEWITZ, Nov. Act. K. Leop. Car. Deutsch. Akad., XLII, No. 2, p. 82, pl. III, fig. 3.

One specimen.

## Family LITHOSIIDÆ.

## Genus PRABHASA, Moore.

## PRABHASA INSIGNIS, Butler.

*Prabhasa insignis*, BUTLER, Cist. Ent., III, p. 8.

Several specimens from Kilimanjaro.

Genus LEPISTA, Wallengren.

LEPISTA PANDULA (Boisduval).

*Lithosia pandula*, BOISDUVAL. Delegorgue Voy. Afr. Austral., II, p. 597, No. 130.

The collection contains one female agreeing absolutely with specimens in the British Museum. *L. limbata*, Butler, described from a male specimen taken at Kilimanjaro, and now in the British Museum, may be the male of this species.

Genus SOZUZA, Wallengren.

SOZUZA STEVENSII, new species.

(Plate VII, fig. 11.)

*Female*.—Front, antennæ, and eyes black; top of head, collar, tegulæ, thorax, abdomen, and anterior wings pale gray. Posterior wings lighter gray. Anterior wings narrowly margined upon costa with black. The under side is much as the upper side, save that the anterior wings are shaded with blackish beneath.

Expanse of wings, 44 mm.

The type, one example from Kilimanjaro, is in the National Museum collection.

I name this species in honor of Mr. Stevens, the bicyclist, who accompanied Dr. Abbott upon his journey to Kilimanjaro.

Family ARCTIIDÆ, Stephens.

Genus UTETHEISA, Hübner.

UTETHEISA PULCHELLA, Linnæus.

*Tinea pulchella*, LINNÆUS. Syst. Nat., I, 2, 884, p. 348.

One specimen.

Genus SPILARCTIA, Butler.

SPILARCTIA ABBOTTII, new species.

*Male*.—Head, thorax, body, and anterior wings luteous. The five posterior segments of the abdomen are banded with black upon the upper side. Upper side: The anterior wings have three minute black spots before the base, two poorly defined spots at the end of the cell, a submarginal series of minute spots bifurcating near the apex, and a small marginal spot at the end of each nervule. All of these spots are dark brown, or black. The posterior wings are white and semi-diaphanous, with a minute black spot at the end of the cell. Under side: The wings upon the under side are white, shading into luteous upon the costa of the primaries. The spots of the upper side disappear upon the under side, or are very faint, except the spots at the end of the cell, which are much larger than upon the upper side, and,

coalescing, form a bold, comma-shaped mark, and the two spots of the inner branch of the bifurcating submarginal series, which are nearest the costa of the primaries, and are relatively large and conspicuous, especially the one nearest the costa.

Expanse of wings, 31 mm.

There are several specimens in the National Museum collection

Genus ALPENUS, Walker.

ALPENUS TRIFASCIATA, new species.

(Plate VII, fig. 10.)

*Male*.—Antennæ, eyes, and front black. Collar, patagia, and thorax very pale ashen. Abdomen yellowish, with a row of seven small black spots on the top and a similar series on the sides. Legs margined with black upon the upper side. The anterior wings are pale ashen, nearly white, and have three transverse macular bands, one near the base, one at the end of the cell, and one on the limbal area. These bands are very sharply angulated about the region of the median nervule, and the spots are here produced along the nervules as lines. The spots composing these bands are all black, and are largest upon the costa and near the inner margin of the wing. The posterior wings have a round blackish spot at the end of the cell, one near the outer angle, and another near the anal angle. The under side is somewhat darker than the upper side, and almost all of the spots of the upper surface are obliterated, or only very faintly reappear upon the lower side.

Expanse of wings, 30 mm.

Type in the National Museum collection, from Kilimanjaro.

Genus TERACOTONA, Butler.

TERACOTONA CLARA, new species.

(Plate VII, fig. 12.)

*Male*.—Antennæ light in color. Tibiæ of anterior pair of legs bright pink. Head, collar, patagia, and thorax very dark brown. Region of metathorax clothed with long pinkish hairs. Abdomen pale brown, annulated and spotted on sides with black. Forewings uniformly brown, not so dark in color as the thorax, thickly strewn with blackish scales, and with a large black spot at the end of the cell and a faint curved transverse black line beyond the cell. Posterior wings white, tinged with pink and yellowish on the costa and outer margin, and with a black spot at the end of the cell. On the under side, the anterior wings are lighter than upon the upper side, and are broadly washed with pink upon the costa. They are darkest in color near the apex. None of the markings of the upper surface reappear, except the spot at the end of the cell, which is very distinct. The posterior wings are on the under side as upon the upper.

Expanse of wings, 36 mm.

Type in the National Museum, from Kilimanjaro.

This species is fully one-third less in size than *T. obscura* and *T. sub macula*, both of which species were described by Walker.

Genus PELACHYTA, Hübner.

PELACHYTA MAURITIA, Stoll.

*Noctua mauritia*, STOLL. Pap. Exot., IV, pl. 345 B.

Genus METARCTIA, Walker.

METARCTIA INCONSPICUA, new species.

(Plate VIII, fig. 3.)

*Male*.—Antennæ, head, collar, and abdomen light reddish-brown, brightest upon the collar. The tegulæ and the upper surface of the thorax are darker brown, without the reddish cast. The upper surface of the anterior wings is of the same color as the upper side of the thorax. The posterior wings are pale, creamy gray, shading on the inner margin into luteous. The under side of both wings is pale ashen gray, tinged with luteous upon the costa.

Expanse of wings, 30 mm.

Described from one specimen in the collection. This insect is represented in the collection of Mr. Herbert Druce by a male and female specimen from the Congo.

Family LIPARIDÆ, Boisduval.

Genus LEUCOMA, Stephens.

LEUCOMA TAVETENSIS, new species.

*Male*.—Head pale luteous. Antennæ, legs, and body pale gray. The wings on both surfaces are white, shading into pale gray on the costa upon the upper surface of the primaries. The edges of the costæ and the fringes of the wings upon the under side are very narrowly pure white. The wings are immaculate, save that at the end of the cell in the primaries there are two minute black spots, visible only upon the upper surface.

Expanse of wings, 40 mm.

The type, a male, is unique in the National Museum collection, and is labeled "Taveta, May, 1888."

Family LASIOCAMPIDÆ, Harris.

Genus LICHENOPTERYX, Felder.

LICHENOPTERYX DESPECTA, Felder.

*Lichenopteryx despecta*, FELDER. Nov. Reise, Lep., IV, pl. 95, fig. 5.

One female specimen.



## Genus STIBOLEPIS, Butler.

## STIBOLEPIS ATOMARIA, new species.

*Male*.—Front reddish. Collar, patagia, and upper side of thorax gray. Legs and under side of thorax and upper and under side of abdomen ochereous. The wings are uniformly light gray upon the upper side, and thickly sown with dark scales, producing a "salt and pepper" effect. Upon the costa of the primaries there is a faint tendency of these black atoms to arrange themselves in bands, especially near the base of the wings. The margin is very narrowly dark gray and the broad fringes are pale ashen. The under side of the wings is uniformly pale gray, shading into ochereous at the base. The wings are thickly dusted over with dark scales upon the outer half and on the costa. These scales are so arranged, just beyond the cell, as to present the appearance of four or five faint and narrow bands. The anterior wings, near the base and below the cell, have few markings.

Expanse of wings, 55 mm.

The type is unique in the collection, and is labeled "Zanzibar" by the authorities of the Museum. But I have a specimen in my own collection which came from near Taveta, and was collected by a French naturalist, so that the type was probably from the interior.

## Family LIMACODIDÆ, Boisduval.

## Genus COSUMA, Walker.

## COSUMA MARGINATA, new species.

(Plate VII, fig. 11.)

*Male*.—Antennæ, head, and body dark olivaceous. Upper side: Anterior wings pale olivaceous and the posterior wings still paler. Both wings have a silky luster. There is a well-defined round, cream-colored mark at the end of the cell of the primaries. The margins have a very narrow stramineous border interrupted by the darker nervules. The fringes are of the same color as the body of the wings. Under side: Both wings are marked as upon the upper surface, but are paler, and the marginal maculations are larger and more distinct.

Expanse of wings, 28 mm.

The type, in the National Museum collection, is unique.

## Family SATURNIIDÆ, Boisduval.

## Genus GYNANISA, Walker.

## GYNANISA ISIS (Westwood).

*Saturnia isis*, WESTWOOD, Jard. Nat. Libr., Entom., VII, 138, pl. 13.

One male in good condition, and larger than usual in specimens from Delagoa Bay.

Genus COPAXA, Walker.

COPAXA FLAVINATA (Walker).

*Dreata flavinata*, WALKER, Cat. Lep. Het. Brit. Mus., XXXII, p. 373

One male.

Family COSSIDÆ.

Genus DUOMITUS, Butler.

DUOMITUS KILIMANJARENSIS, new species.

(Plate VII, fig. 8.)

*Male*.—Antennæ, head, thorax, body, and legs brown. Metathorax heavily clothed with pale cinereous hairs. Upper side: Anterior wings wood-brown, darkest on the costa near the base. The wing is profusely mottled with small brown spots, and is crossed beyond the cell by a broad band of very dark brown, which does not touch the costa, nor quite reach the inner edge. This band is split by a wedge of very pale brown at the end nearest the inner margin. The wing is further ornamented by an interrupted, irregular submarginal band of brown. The posterior wing is paler in color than the anterior wing. The limbal area of this wing is ornamented by spots growing darker and heavier toward the outer margin. Near the outer angle these spots are fused so as to form a V-shaped mark. Under side: Upon the under side the wings are darker than upon the upper side, and the same markings reappear, but heavier, and more sharply defined.

Expanse of wings, 58 mm.

The type in the National Museum collection is unique.

Family HEPIALIDÆ.

Genus HEPIALUS, Fabricius.

HEPIALUS KENIÆ, new species.

(Plate VII, fig. 6.)

*Female*.—Antennæ, head, thorax, body, and legs brown. The metathorax is heavily clothed with pale cinereous hairs. Upper side: Anterior wings wood-brown. About the middle of the costa there are three dark brown spots. Above the cell, about one-third of the way from the base, is a large pale spot slightly clouded with brownish in the center. A smaller oval spot of like color appears in the cell near its end. Above the end of the cell there are two small, silvery, sagittate marks with their points in opposite directions, the one above the other. The larger arrow, which has its barbs toward the outer border of the wing, is immediately followed by a short curved band of brown spots bordered inwardly and outwardly by pale cinereous; this short band is followed by a longer submarginal band of similar spots, extending from near the apex to before the outer angle; there are also two comma-

shaped streaks below the cell on the inner margin, inclosing between them a dark circular spot bordered by lighter cinereous. The posterior wings are uniformly fuliginous grey, as is also the entire under-surface of both wings.

Expanse, 50 mm.

The type, in the National Museum collection, is unique.

Genus GORGOPIS, Hübner.

GORGOPIS ABBOTTII, new species.

(Plate VII, fig. 9.)

*Male*.—The body and the wings upon both the upper and the under side are very pale fawn, shading at the commissures of the wings and the costæ into pale luteous. The vestiture of the body and the wings is lustrous and silky.

Expanse of wings, 45 mm.

The National Museum collection contains a couple of specimens. The species is represented in the collection of Mr. Herbert Druce by an unnamed example coming from the region of the Cape.

Group NOCTUÆ.

Family HADENIDÆ.

Genus CONSERVULA, Grote.

CONSERVULA MINOR, new species.

(Plate VIII, fig. 1.)

*Male*.—Front white. The thorax and abdomen are pale brown. The anterior wings are of the same color as the thorax, lustrous and ornamented with darker brown lines and spots which are all margined externally by paler lines. These lines are as follows: Near the base three short lines succeeding each other, and running parallel to the outer margin, a broader band starting at the inner third upon the costa and traversing the wing on a line at right angles with the lines at the base, and fasing just below the end of the cell with a line originating near the costa at the outer third and running parallel to the outer margin as far as the inner margin. The Y-shaped mark thus formed, incloses a large spot at the end of the cell. There is a slightly curved submarginal band. The posterior wings are white, slightly tinged with pinkish. The under side of both wings is pale grayish, with an obscure blotch of darker color at the ends of the cells on both wings.

Expanse of wings, 32 mm.

Type in the National Museum collection, from Kilimanjaro.

## Family OMMATOPHORIDÆ, Guénée.

Genus PATULA, Guénée.

PATULA MACROPS (Linnæus).

*Phalana-Attacus macrops*, LINNÆUS, Syst. Nat., Ed. 12, III, p. 225 (1768).

One example from Taveta, May, 1888.

Genus CYLIGRAMMA, Boisduval.

CYLIGRAMMA LATONA, Cramer.

*Phalana latona*, CRAMER, Pap. Exot., I, 20, pl. XIII, fig. B.

One good specimen.

## Family HYPOPYRIDÆ, Guénée.

Genus CALLIODES, Guénée.

CALLIODES PRETIOSISSIMA, new species.

(Plate VIII, fig. 2.)

*Male*.—Allied to *C. pyrula*, Hopffer, but differing in having the ground color of the upper surface brown and under side tawny. Upon the upper side of the secondaries there are more lines than in Hopffer's species, and upon the under side there is a transverse median line angulated at the end of the cell.

Expanse of wings, 40 mm.

The type, in the National Museum collection, is unique.

## OGOZIA, new genus.

Allied to *Hypopyra*, and in general outline somewhat suggesting *Sphingomorpha*. Abdomen produced fully one-third of its length beyond the posterior wings, and tufted at its anal extremity in the male. Forewings narrow, produced, very falcate at the apex, and rounded on the inner angle. Posterior wings subtriangular, the outer margin evenly rounded. Patagia very long, covering the commissures of both the anterior and posterior wings. Palpi compressed at base, porrect, the first joint flattened vertically, the second subconic, the third slender and slightly knobbed at the end. The antennæ are long, and serrate for two-thirds of the distance from the base. The tibiæ are very densely clothed with hair. The general coloration is brown, with a submarginal transverse line sharply angulate at the apex and returning parallel to the costa.

*Type*.—*O. tavetensis*, Holland.

OGOZIA TAVETENSIS, new species.

(Plate VII, fig. 13.)

*Male*.—The first joint of the palpi is dark brown, the second and third are lighter, corresponding with the general color of the body. The eyes are large, prominent, black. The front is light brown. The

hairs of the collar are erect, and in front thickly compressed and arranged in the form of two upright dark-brown fan-shaped masses. The body of the collar, the patagia, the thorax, and the abdomen are light wood-brown, corresponding with the color of the anterior wings. There are two dusky stripes on the abdomen, one on either side. The under side of the body and legs are uniformly light wood-brown. The anterior wings are very sharply falcate, and broadly and evenly rounded at the inner angle. The ground color of the anterior wings upon the upper side corresponds with that of the thorax. There is a round dark spot in the cell, and some faint darker markings about the middle of the outer margin and at the apex. Beginning below the costa, about one-third of the distance from the apex, there is a narrow yellow line, which extends outwardly to within about two millimeters of the margin, where it forms an acute angle with a similar line running from the costa just before the apex to the inner margin before the outer angle. These yellow lines are bordered faintly on both sides by brown. The color of the posterior wings is dark brown, lighter at the base, and with some faint yellowish and black striae at the anal angle. The color of the under side of the wings is light brown, slightly glossed with purple. The forewing is clouded with fuliginous near the inner margin; the hind wing is hoary on the inner margin. A band of minute blackish spots traverse the limbal area of both wings, and there are a few similar spots near the apex of the primaries.

Expanse of wings, 52 mm.

The type, in the National Museum, is unique.

Family OPHIUSIDÆ, Guénée.

Genus GRAMMODES, Guénée.

GRAMMODES STOLIDA (Fabricius).

*Noctua stolidus*, FABRICIUS, Ent. Syst., 599.

One example of this species, which is also found in Europe.

Genus TRIGONODES, Guénée.

TRIGONODES MAHARA, Felder and Rogenhofer.

*Trigonodes mahara*, FELDER and ROGENHOFER, Lep. Nov. Reise, pl. CXVII, fig. 13.

This species is very near *T. acutata*, Guénée.

Family DYSGONIIDÆ, Moore.

Genus SPHINGOMORPHA, Guénée.

SPHINGOMORPHA MONTEIRONIS, Butler.

*Sphingomorpha monteironis*, BUTLER, Ann. and Mag. Nat. Hist. (4), XIV, p. 106.

Family REMIGIIDÆ, Guénée.

Genus REMIGIA, Guénée.

REMIGIA CONVENIENS, Walker.

*Remigia conveniens*, WALKER, Cat. Lep. Het. Brit. Mus, XIV, p. 1507.

This species is represented by one male and one female specimen.

Family HYPENIDÆ, Guénée.

Genus HYPENA, Schrank.

HYPENA, sp. (?)

A specimen too much worn to be identified.

Group GEOMETRÆ.

Family ENNOMIDÆ, Guénée.

Genus TETRACIS, Guénée.

TETRACIS, sp. (?)

The specimen is too poor to be determined.

Family MACARIIDÆ.

Genus GONODELA, Boisduval.

GONODELA KILIMANJARENSIS, new species.

(Plate VIII, fig. 4.)

Front, the entire body, and both wings upon the upper surface as far as the transverse exterior line pale lilacine gray. Upper side: The outer third of both wings between the transverse exterior line and the margin broadly and uniformly dark purplish grey, save a few faint cloudings of lighter color. Both wings have a black point at the end of the cell. Upon the primaries there is a basal, a transverse median, and a transverse exterior line, all parallel, and all angulated below the costa. The transverse outer line is continued upon the secondaries as the transverse median line of the secondaries and becomes diffuse, and is interrupted by the black dot at the end of the cell. The transverse outer line of the secondaries is narrow, dark, and distinct. The margins are dark brown, darkest on the intraneural interspaces; the fringes are uniformly grayish. Under side: The ground color is whitish, tinged with ochreous on the costæ of both wings, and profusely mottled with small brown points and blotches. The exterior margin is broadly rufous, save where the faint cloudings of the upper surface are reproduced as broad and distinctly defined patches of the prevalent whitish ground color of the under side. The lines and points of the upper side are otherwise very indistinctly and feebly reproduced upon the lower side.

Expanse of wings, 35 mm.

The type, in the National Museum collection, is unique.

GONODELA RHABDOPHORA, new species.

(Plate VIII, fig. 5.)

The ground color is whitish, with profuse minute maculations. At the base of the primaries there is an oblique brown line, which is followed about the middle by a line which is curved or hooked like a



crozier just below the costa. On the costa before the apex is a sub-triangular brown spot. Beginning just below the apex on the outer margin and extending obliquely across the wing to the middle of the inner margin is a broad dark line, beyond which the entire outer portion of the wing is clouded with dark brown. A still darker curved line traverses this dark triangular area, and terminates just before the outer angle. The posterior wing is ornamented by a broad median band, and a very broad submarginal band, straight internally and indented externally. The margin is clouded with brown. Under side: The markings of the upper side are reproduced upon the under side, but the bands are all warm ferruginous, and are more clearly and sharply defined.

Expanse of wings, 32 mm.

The type, in the National Museum collection, is unique.

GONODELA, sp. (?)

The specimen represents a form very near, if not identical with, a species to which Mr. Warren has affixed the name *maculosa* in the collections of the British Museum, and as Mr. Warren has prepared a manuscript description which may shortly be published, I refrain from characterizing this form.

Genus TEPHRINA, Guénée.

TEPHRINA OBSERVATA, Walker.

*Tephрина observata*, WALKER, Cat. Lep. Het. Brit. Mus., XXIII, p. 963.

Genus EUBOLIA, Boisduval.

EUBOLIA, sp. (?)

The hind wings are almost entirely wanting from the specimen, and I cannot therefore attempt to describe it. The species is not represented in the British Museum.

Genus SIONA, Duponchel.

SIONA, sp. (?)

I refer two specimens, with some doubt, to Duponchel's genus *Siona*. They are not found in the British Museum, but are in too poor a condition to warrant description.

Family FIDONIDÆ, Guénée.

Genus STERRHA, Hübner.

STERRHA SACRARIA (Linnæus).

*Phalana-Geometra sacraria*, LINNÆUS, Syst. Nat., I, 2, p. 863 (1766).

Several examples.

Gen. (?) sp. (?)

A geometer too poor to determine anything about it.

## Group PYRALES.

Genus STEMORRHAGES, Lederer.

STEMORRHAGES THALASSINALIS (Boisduval).

*Botis thalassinalis*, BOISDUVAL, Faune Ent. Madgr., p. 117, pl. XVI, fig. 6.

Boisduval makes this insect the same as *sericea*, Drury, and applies the name upon the ground that there is already a *Botis sericealis*. But the anal tuft in *sericea*, Drury, is black, whereas in the present form it is grassy-green as the rest of the body. I therefore retain the name of Boisduval, in spite of the fact that Walker has sunk it as a synonym of *sericea*, Drury. This it most certainly is not, though the author of the name regarded it as identical with *sericea*, Drury. *Sericea*, Drury, and *thalassinalis*, Boisduval, must both stand.

One example.

Genus HYMENIA, Hübner.

HYMENIA FASCIALIS (Cramer).

*Phalana fascialis*, CRAMER, Pap. Exot., IV, pl. CCCXCVIII, fig. 6.

One example.

## Group PHYCITES.

Genus CANTHELEA, Walker.

CANTHELEA SATURATELLA, Mabilie.

One example. So determined by Mons. E. Ragonot, of Paris.

Besides these species, there are two specimens of small Tineid moths in bad condition, which I am altogether unable to name, and which no one to whom I have shown them can assist me in naming.